



NUTRITION AND AGEING

Vision

A Healthy, Thriving Busoga

Mission

To convene and coordinate
Stakeholders' efforts to
improve Health and
livelihoods in Busoga

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President Allied Nutritionists Association

What Is Ageing

Ageing can be defined as the **time-related deterioration** of the physiological functions necessary for survival and fertility



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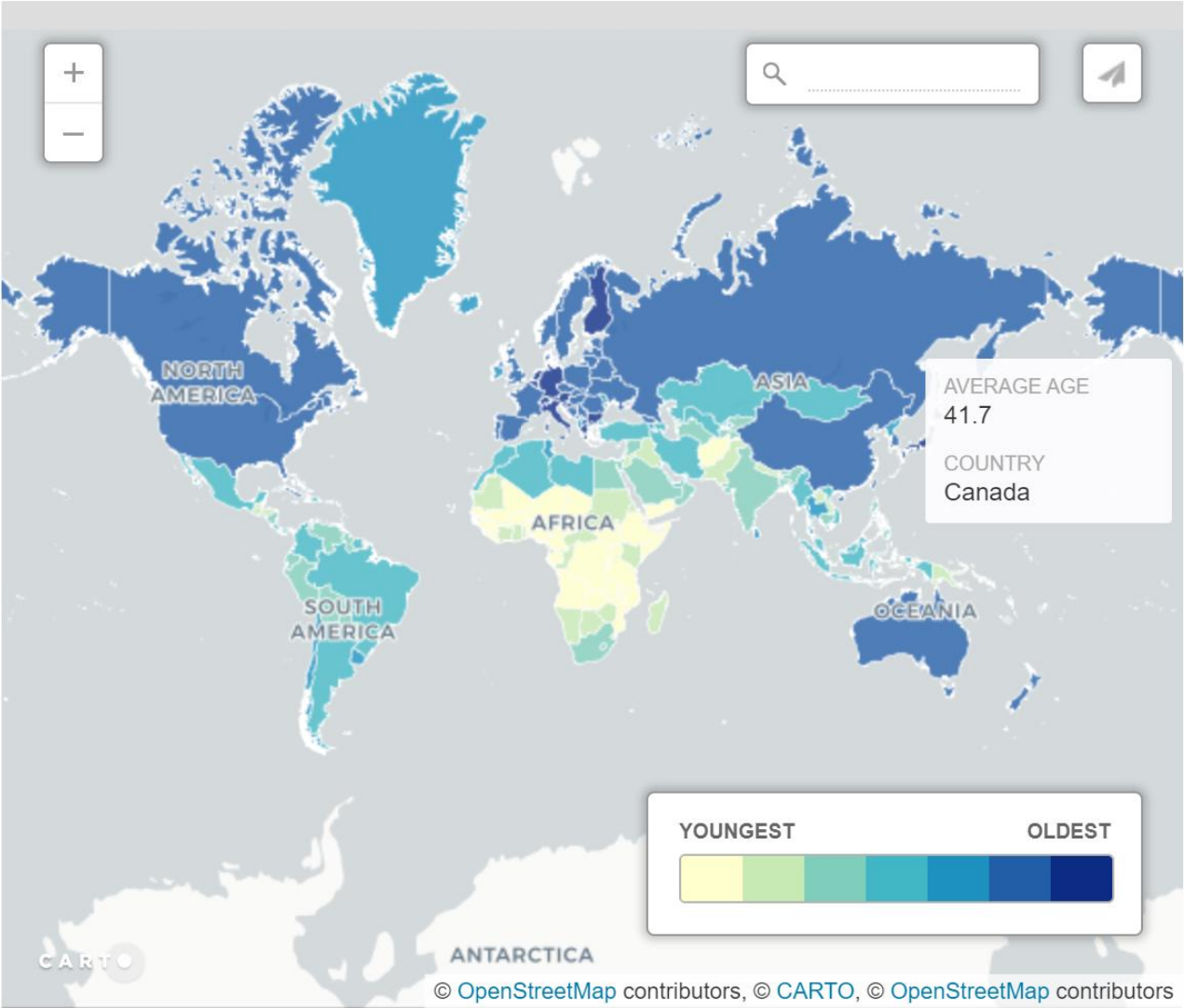
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
Elderly Population in the world



Population ages 65 and above, percent of total, 2022 - Country rankings:

Countries	Population ages 65 and above, 2022	Global rank
Monaco	35.92	1
Japan	29.92	2
Italy	24.05	3
Finland	23.27	4

Here's a full list of global countries, sorted by percentage of population under 15 years old

Country	Share of Population Younger Than 15 (% of total, 2019)
 Niger	49.8%
 Mali	47.3%
 Chad	46.8%
 Angola	46.6%
 Uganda	46.5%
 Somalia	46.4%
 Congo, Dem. Rep.	46.0%
 Burundi	45.4%
 Burkina Faso	44.7%
 Zambia	44.5%

World Bank 2019

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African countries with the lowest median age as of 2022

Country	lowest median age as of 2022
Niger	14.8
Uganda	15.7
Angola	15.9
Mali	16.1
Chad	16.1

Statista 2023

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Higher likelihood of healthy ageing (3 studies)

- Greater or improved adherence to healthy dietary patterns
- Higher dietary diversity

Lower risk of functional disability (7 studies)

- Greater or improved adherence to healthy dietary patterns
- Higher consumption of green tea

Lower risk of depression (8 studies)

- Greater or improved adherence to healthy dietary patterns
- Higher consumption of soy product, fruit, and vegetable

Lower risk of cognitive impairment or dementia (58 studies)

- Greater or improved adherence to healthy dietary patterns
- Higher dietary diversity
- Higher intakes of vegetable, legume, tea, milk and dairy, fresh red meat, nuts, fish, amino acid, riboflavin and folate, animal protein, unsaturated fatty acids, potassium, calcium, magnesium, and

This is the summary of major findings regarding the associations between diet/nutrition and outcomes of ageing.

Analysis of Uganda's Adult Nutrition status and disease

Adult nutrition status and disease

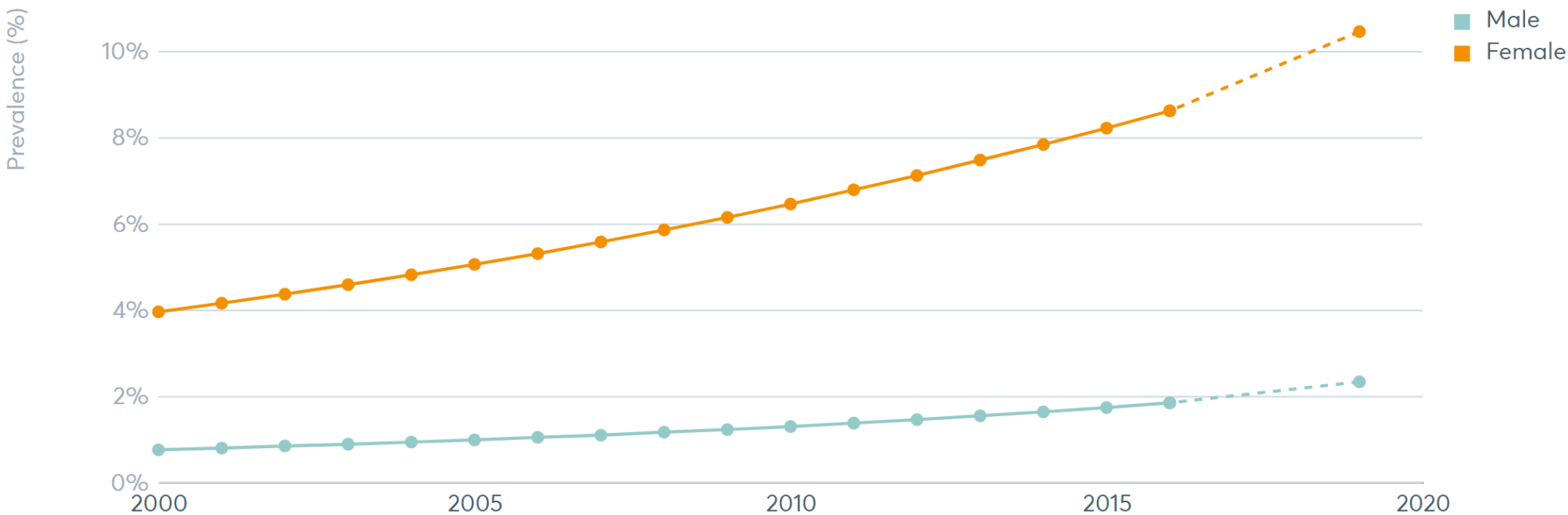
Prevalence of underweight, overweight and obesity in adults aged 18 years and over

Select indicator:

Underweight

Overweight

Obesity



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Causes of ageing



Internal cause + external cause

- **Internal cause : cell damage, ageing and death**
- **external cause : free radical damage oxidation**



Influence of external environment, excessive oxidation of free radicals and the body's own cell damage and ageing, double attack of internal and external factors, seriously accelerate the rate of human ageing!

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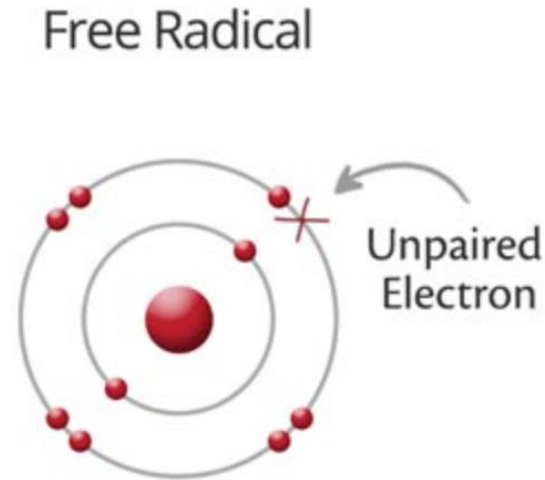
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Free radical, skin ageing "exogenous culprit"

What are free radicals?

A free radical can be defined as any molecular species capable of independent existence that contains an unpaired electron in an atomic orbital



Free radical hazards

- Causes skin cells to deactivate
- Cause skin cell ageing



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What are the sources of the Free Radicals



The main source of free radicals in the body is physiological metabolism, however, ROS and RNS can also be generated through exposure to external factors such as

- oral bacteria,
- ionizing and ultraviolet radiation,
- food, and air pollution,
- alcohol, and cigarette smoking

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Oxidative Stress

Oxidative stress is the damage that results from an imbalance between free radicals and your body's store of antioxidants.

organisms age because of accumulated free radical damage to cells and DNA.

Cumulative damage to cell components and connective tissue leads to wrinkles, decreased physical capability, and increased susceptibility to disease

Free radicals will take (or leave) an electron, whether it's available or not, including those in fragile DNA molecules, proteins, and fats.

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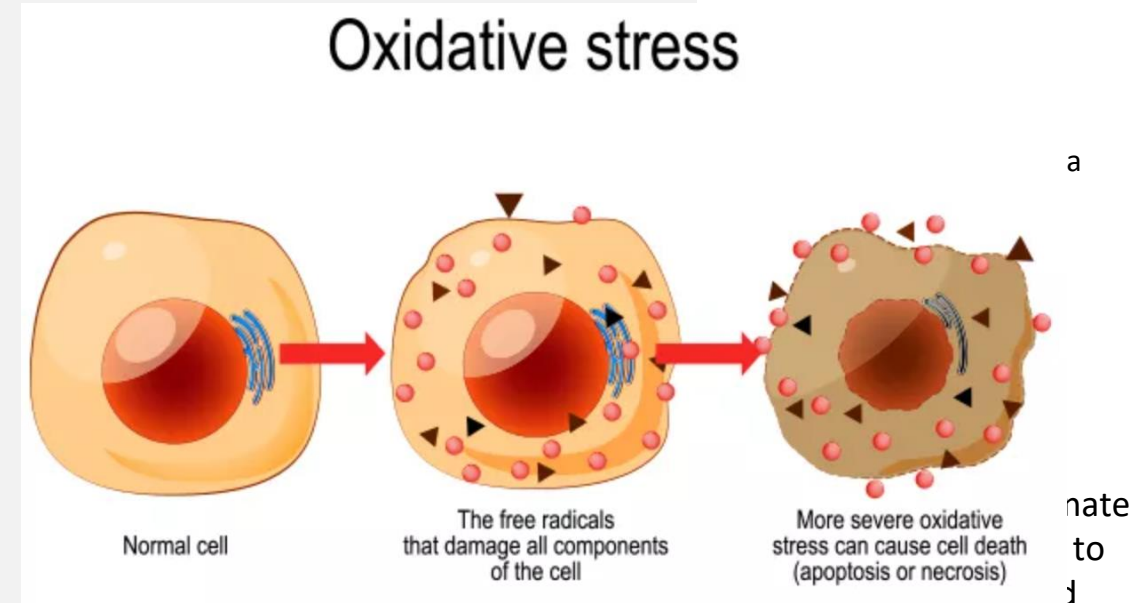
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Effect of Free Radicals

Free Radicals damage not only the cell, but also the DNA.

- ❖ When the cell is damaged, it loses its shape and functioning
- ❖ When DNA is damaged, this can result in cell senescence or apoptosis.
- ❖ The cell naturally has **DNA protection** and repair mechanisms, ie; **PARP** and **Sirtuins**.
- ❖ However, they both use a cofactor of NAD hence Good nutrition comes into play.
- ❖ Also the effect of free radicals can be neutralized by Anti oxidants



nate
to
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Antonio Nuzzo 2020

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The most direct manifestation of ageing is wrinkles

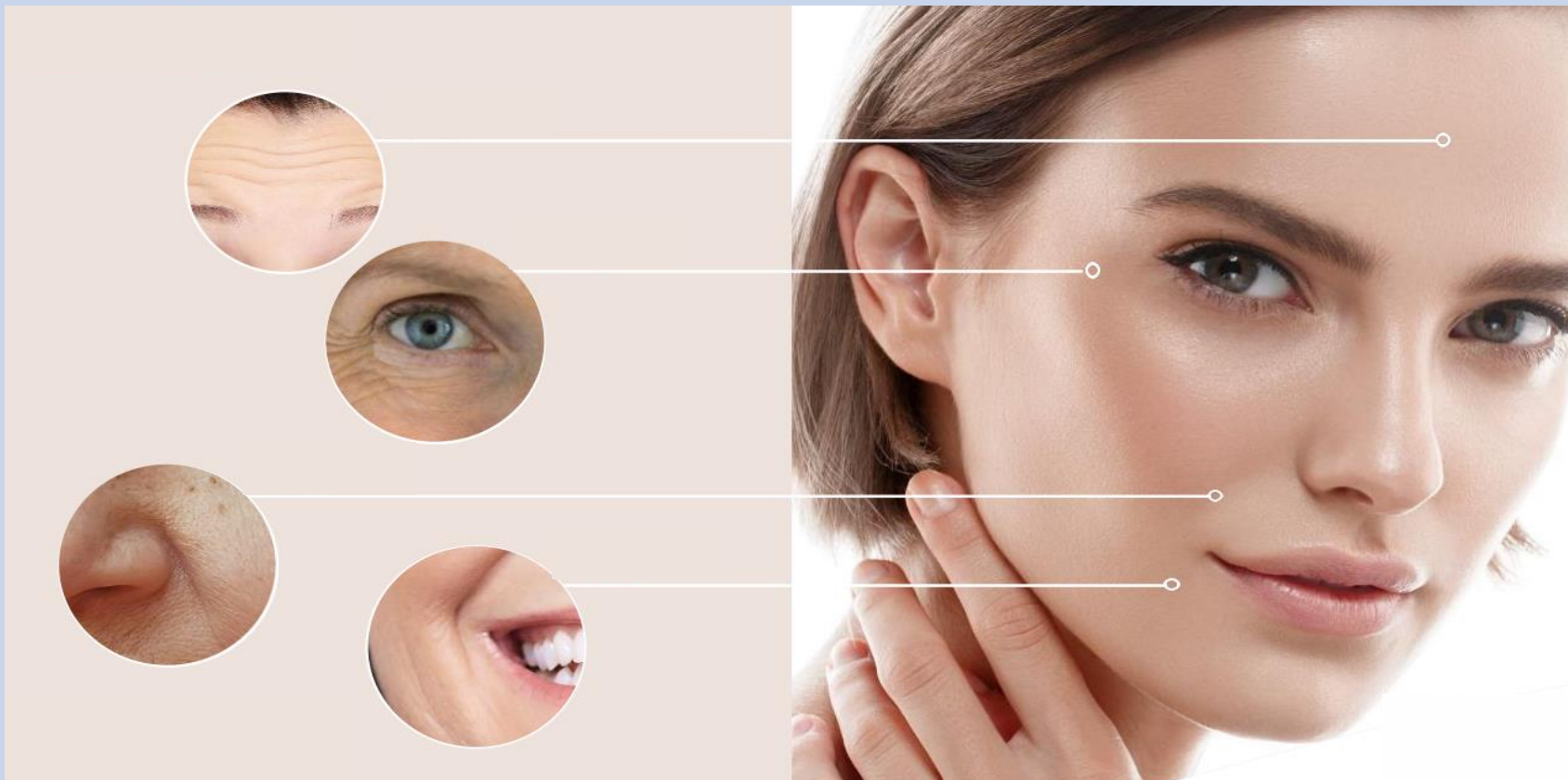
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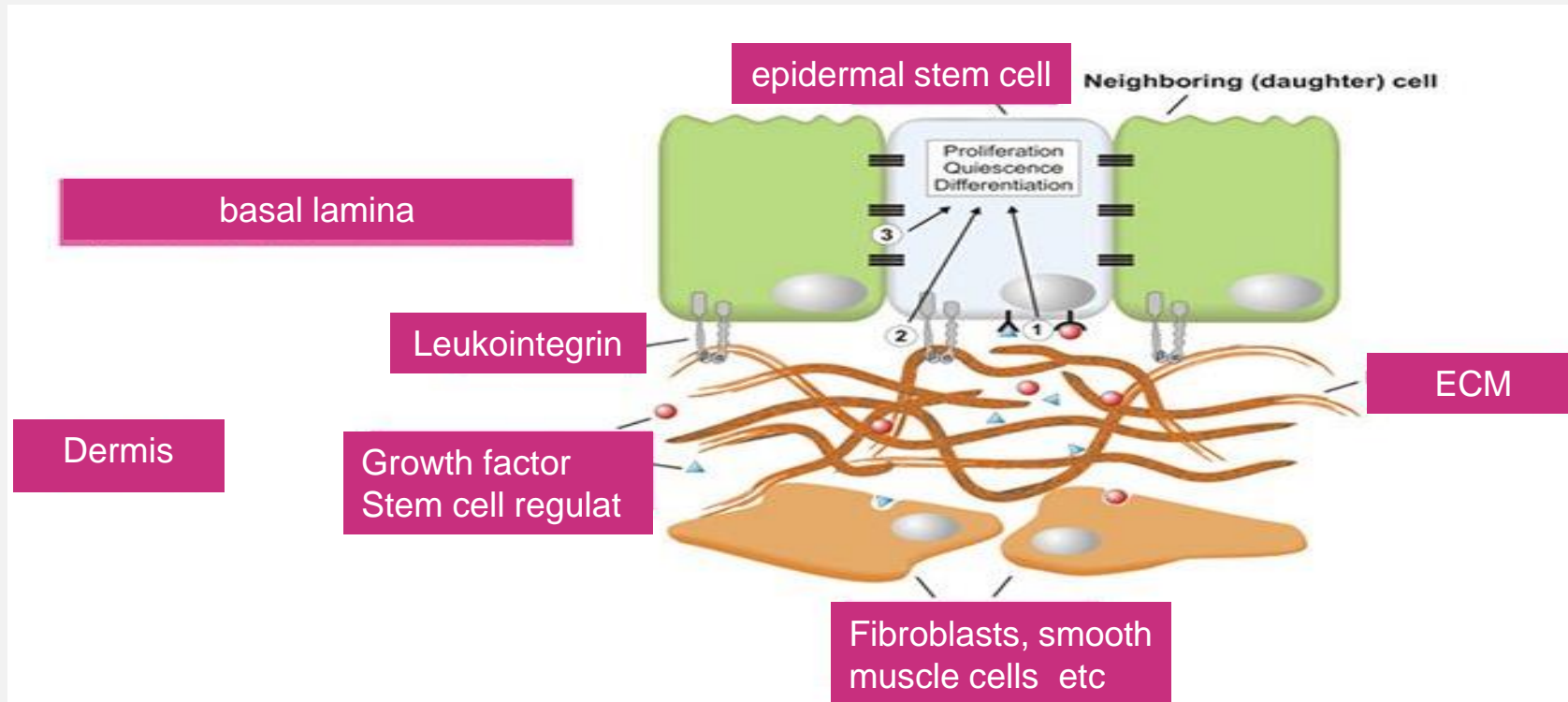
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ECM ageing



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- ECM is the glue that holds the epidermis and dermis together. The formation of wrinkles is closely related to the decrease of physiological function of the extracellular matrix [ECM].
- ECM contains some of the most important components of skin, such as fibrous structural proteins (including collagen, elastin, fibrin, etc.), polysaccharides (hyaluronic acid, etc.), and a large number of growth factors, etc.

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Anti Oxidants

They **stop free radical damage** to molecules by accepting or donating an electron to make the free radical stable. Antioxidants are unique in that **they remain stable when they donate an electron**.

Some of the Examples include:

- ❖ SOD (Cabbage, Broccoli)
- ❖ Vitamin A (Carotene, Carrots)
- ❖ Vitamin C (Lemon)
- ❖ Vitamin E (sun flower oil, Whole grains, nuts and seeds)
- ❖ Vitamin B3 (Beef liver, Pork, Brown rice, Poultry)
- ❖ Polyphenols (Red wine, Chocolate, berries, cocoa powder)
- ❖ Anthocyanins –OPC (Grape seeds, berries, cabbage)
- ❖ Selenium- (Brazil nuts, Cottage cheese, Turkey, Mushroom)

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Why Nutrition in ageing



- ❖ Slow down Free radical damage
- ❖ Ensure effective DNA Protection and Repair
- ❖ Avail enough anti oxidants that can neutralize the Large sums of Free radicals
- ❖ Better Looks (Daniel 1:11-15)

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CONCLUSION



- ❖ Age is a number
- ❖ ageing shouldn't be inability (Moses led Israel in a desert at 80 years for 40 years)
- ❖ ageing shouldn't come with bad looks, Sarah was still beautiful at an old age.
- ❖ Being Diet Cautious will keep you Young in looks and in Works.
- ❖ As a country with a young population, we need healthy aging for productivity over the years.

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THANK YOU

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